

AMENDMENTS TO THE DRAWINGS

The attached new sheet includes Figure 8.

REMARKS**Introduction**

Claims 1-45 are currently pending the application. Claims 1, 4, 9-16, 19, 23-31, 35-38, and 43-45 have been amended. The specification has also been amended. A new drawing sheet has been submitted. No claims have been added or canceled. Applicant respectfully submits that no new matter has been added. Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and the following remarks.

35 U.S.C. § 101 Rejection

Claims 1-45 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. In response, Applicant has amended each of independent claims 1, 16, 31, and 38. Specifically, claim 1 has been amended to recite the feature of *conveying the probability of wind-turbine collision*. Claims 16, 31, and 38 have been similarly amended. Support for these amendments may be found in at least p. 5, lines 9-21. Assuming for sake of argument that the claims as they existed prior to this amendment were directed non-statutory subject matter, Applicant respectfully submits that each of independent claims 1, 16, 31, and 38 now is directed to statutory subject matter. Applicant respectfully requests that the 35 U.S.C. § 101 rejection of claims 1, 16, 31, and 38 be withdrawn.

Claims 2-15, 17-30, 32-37, and 39-45 depend from and further restrict independent claims 1, 16, 31, and 38, respectively. For at least the reasons given above with respect to independent claims 1, 16, 31, and 38, Applicant respectfully requests that the 35 U.S.C. § 101 rejection of claims 2-15, 17-30, 32-27, and 39-45 be withdrawn.

35 U.S.C. § 112, First Paragraph Rejection

Claims 4 and 31-45 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Examiner asserts that the specification does not contain an enabling disclosure of the feature of claim 4 of modeling a challenged bird as a curved surface, the feature of claims 31-45 of modeling a challenged animal,

and the feature of claims 15 and 30 of simulating a non-linear flight path of the challenged bird by adjusting a flight speed of the challenged bird.

With regard to claim 4, Applicant respectfully draws the Examiner's attention to p. 14, lines 10-11 of the application as originally filed, where modeling a bird as a curved surface is discussed in depth. Applicant respectfully submits that the specification provides an enabling disclosure of the claimed features of claim 4. Applicant therefore respectfully requests that the 35 U.S.C. § 112, first paragraph, rejection of claim 4 be withdrawn.

With regard to claims 31-45, Applicant respectfully draws the Examiner's attention to p. 23, lines 5-8 of the application as originally filed, where it is explicitly stated that "the principles of the present invention are not limited to birds or to wind turbines, but could instead be applied to any structure placed in a given structure area in the environment and used to determine probabilities of collision by animals with those structures" (emphasis added). In fact, an example of a non-avian application of principles of the present invention is provided at p. 10, lines 8-10. Applicant respectfully submits that the specification provides an enabling disclosure of the claimed features of claims 31-45. Notwithstanding the above, in an effort to facilitate prosecution, Applicant has amended claims 31-45 to address the enablement rejection. Applicant respectfully requests that the enablement rejection of claims 31-45 be withdrawn.

With regard to claims 15 and 30, the Examiner asserts that there is "no model element disclosed where adjusting the speed would alter the flight path." Applicant respectfully submits that claims 15 and 30 do not include the feature of altering a flight path by adjusting speed. Rather, claims 15 and 30 claim the feature of a non-linear flight path of the challenged bird being simulated (rather than altered) by adjusting a flight speed of the challenged bird. Applicant respectfully submits that at least p. 21, lines 7-14 provide an enabling disclosure of this feature. Specifically, at lines 13-14, non-linear flight paths are disclosed to be simulated by reducing the flight speed of the birds. Equation 30 on p. 21 further provides a formula that may be used to factor a bird's speed (which, as stated above, is adjustable) into collision-probability calculations. Applicant respectfully submits that the specification adequately supports the claimed features of claims 15 and 30. Applicant respectfully requests that the 35 U.S.C. § 112, first paragraph, rejection of claims 15 and 30 be withdrawn.

35 U.S.C. § 112, Second Paragraph

Claims 1-45 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. The Examiner asserts that it is unclear what is intended by the recitation of a *challenged-bird model* and that there is no teaching of a *challenged animal model*.

Applicant respectfully submits that the terms *challenged-bird model* and *challenged-animal model* are not indefinite. However, in an effort to facilitate prosecution, Applicant has amended both the terms *challenged-bird model* and *challenged-animal model* to *approaching-bird model*. Applicant respectfully submits that amendment of *challenged-bird model* to *approaching-bird model* in no way narrows the claims so amended. Applicant respectfully submits that no new matter has been added. Withdrawal of the rejection of claims 1-45 as indefinite is respectfully requested.

Objections to the Drawings Under 37 CFR 1.83(a)

The drawings stand objected to under 37 CFR 1.83(a) for failing to show every feature of the invention specified in the claims. Specifically, the Examiner asserts that none of the drawings show elements or features for modeling a challenged bird, modeling a challenged bird as a curved surface, modeling a challenged animal, or modeling a wind park.

Applicant respectfully submits that, for reasons similar to those given with respect to the 35 U.S.C. § 112 second paragraph rejection, there is adequate support in both the drawings and the specification for the claims. In response to the objection to the drawings, Applicant has added Figure 8. Application respectfully requests that the objections to the drawings under 37 CFR 1.83(a) be withdrawn.

Rejection under 35 U.S.C. § 102

Claims 1-45 stand rejected under 35 U.S.C. § 102(b) as being anticipated by “The Mathematical Model of Bird Collisions with Wind Turbine Rotors” by V.A. Tucker (“Tucker”).

Independent claim 1 is directed to a method of calculating probability of collision by birds within a wind park. Claim 1 has been amended to recite that a wind park comprises more than one wind turbine. Claims 16, 31, and 38 have been similarly amended. Claim 1 has also been amended to clarify that modeling a wind turbine is not restricted to modeling a rotor, but also comprises modeling at least one of a nacelle, a monopole, and a hub. Claim 16 has been similarly clarified.

Applicant respectfully submits that Tucker fails to teach, suggest, or render obvious at least two features of amended independent claim 1, namely: 1) modeling a **wind turbine** to create a wind-turbine model; and 2) modeling a **wind park** to create a **wind-park model**, the wind park comprising more than one wind turbine. In contrast, Applicant respectfully submits that Tucker teaches collision modeling only for bird collisions *within the rotor area of a single wind turbine*. Tucker admits that "the collision model in this paper predicts the probability for birds [with]...simple one-dimensional blades...and three-dimensional blades" (p.253, abstract). Likewise, the Examiner-cited sections and figures relate to collisions within the rotor area of the wind turbine and do not contemplate the greater complexity involved in modeling more than merely a rotor, much less a more complex structure as claimed or an entire **wind park**. Applicant respectfully submits that independent claim 1 distinguishes over Tucker. Withdrawal of the 35 U.S.C. § 102 rejection of independent claim 1 is respectfully requested.

Independent claim 16 is directed to an article of manufacture for calculating probability of collision by birds within a wind park. Independent claim 31 is directed to a method for calculating probability of collision by animals with at least one structure. Independent claim 38 is directed to an article of manufacture for calculating probability of collision by animals within a structure area. For reasons similar to those given with respect to independent claim 1, Applicant respectfully submits that independent claims 16, 31, and 38 also distinguish over Tucker. Applicant respectfully requests that the 35 U.S.C. § 102 rejection of independent claims 16, 31, and 38 be withdrawn.

Dependent claims 2-15, 17-30, 32-37, and 38-45 depend from and further restrict independent claims 1, 16, 31, and 38, respectfully, in a patentable sense. For at least the reasons given with respect to the independent claims, Applicant respectfully submits that the dependent

claims also distinguish over Tucker. Applicant respectfully requests that the 35 U.S.C. § 102(b) rejection of the dependent claims be withdrawn.

Claim 3 is directed to the method claim 2 of calculating probability of collision by birds within a wind park. Applicant respectfully submits that, in addition to the reasons given above with respect claim 1, Tucker fails to teach or suggest the feature of claim 3 of, that the step of dimensionally modeling the wind turbine comprises inputting a blade depth of the rotor, inputting a blade width of the rotor, and modeling a monopole of the wind turbine. Applicant respectfully submits that Tucker discloses modeling one-dimensional blades, as indicated by the representation of the blades as straight lines graphed onto the x-y axis. Tucker even states that **"three dimensional blades have length, chord, and twist, but no thickness"** (p.253, column 2, paragraph 4). In contrast, a dimensional model as claimed in claim 3 permits inputting a blade depth of the rotor, a feature Tucker explicitly repudiates. Applicant respectfully submits that at least for this additional reason Tucker fails to teach or suggest this feature of claim 3. Applicant respectfully requests that the 35 U.S.C. § 102 rejection of claim 3 be withdrawn.

Claim 4 is directed to the method of claim 1 of calculating probability of collision by birds within a wind park. Applicant respectfully submits that, in addition to the reasons given above with respect claim 1, Tucker fails to teach or suggest the feature of claim 4 that the challenged-bird model assumes that the challenged bird enters a plane of the rotor of the wind turbine with a belly of the challenged bird facing a hub of the rotor. **In contrast, in section 3 on p. 254 of Tucker, Tucker specifically states that its model "does not distinguish different severities of collisions, and a collision may be a mere brush of a wing tip against blade or a head-on contact"** (p. 254, column 2, paragraph 3). Accordingly, in the Examiner-cited sections of Tucker mean probabilities are disclosed, but no particular type of collision is explored. Applicant respectfully submits that at least for this additional reason Tucker fails to teach or suggest this feature of claim 4. Applicant respectfully requests that the 35 U.S.C. § 102 rejection of claim 4 be withdrawn.

For reasons similar to those given with respect to claim 4, Applicant respectfully submits that Tucker fails to teach or suggest at least two features of dependent claim 8, namely, calculating a worst-case collision probability per row by the challenged bird and calculating a

best-case collision probability per row by the challenged bird. In the Examiner-cited sections of Tucker, only mean probabilities are disclosed based on down-wind, up-wind, and cross-wind, and not based on an overall worst case scenario. Further, even the probabilities that are disclosed by Tucker are not calculated per row. Since Tucker only discloses one turbine, there is nothing within Tucker to teach or suggest calculating any probability per row of turbines. Applicant respectfully submits that at least for this additional reason Tucker fails to teach or suggest this feature of claim 8. Applicant respectfully requests that the 35 U.S.C. § 102 rejection of claim 8 be withdrawn

Rejection under 35 U.S.C. § 103

Claims 1-45 have been rejected in the alternative under 35 U.S.C. § 103(a) as being obvious over Tucker. Applicant respectfully submits that even in an obviousness rejection the prior art reference(s) must teach or suggest all the claim limitations. For reasons similar to those discussed above with respect to the 35 U.S.C. § 102(b) rejection, Applicant respectfully submits that Tucker fails to render any of claims 1-45 obvious. Applicant respectfully requests that the 35 U.S.C. § 103 rejection of claims 1-45 be withdrawn.

Conclusion

In view of the above amendments and remarks, Applicant believes the pending application to be in condition for allowance. A Notice to that effect is respectfully requested.

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Respectfully submitted,

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